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TINAL CANAL

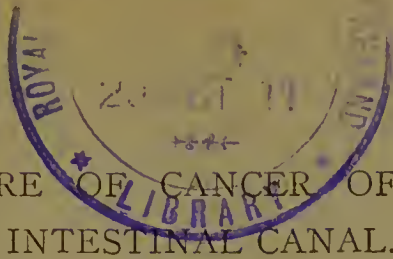
— BY —

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SURGICAL CURE OF CANCER OF THE GASTRO-
INTESTINAL CANAL.*

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The cancer problem is the most important which confronts mankind, and while we are perhaps no nearer its final solution so far as knowledge of its direct cause is concerned, recent investigation has at least cleared away some of the fog of supposition and superstition which has surrounded the subject in the past.

All forms of animal life are liable to some form of cancer, and the statements made by travelers that aboriginal races do not suffer from the disease, is based upon inference and incorrect observation. The health margin of primitive people is very narrow and the victims of cancer among them succumb quickly in the struggle for existence. The disease therefore, is but little in evidence rather than absent.

It has been definitely shown also that cancer is not hereditary although it cannot be said positively that the soil in certain families is not more favorable to its development than it is in others. The presumptive evidence is against direct contagion by inoculation although the Scotch verdict of "not proven" best describes the present status of our knowledge.

During the last ten years an enormous impetus has been given to the study of cancer, by the foundation of research laboratories. In this country they have been endowed by private philanthropy, as in Boston, or through state aid as in Buffalo, New York, In England the active work is represented by the Imperial Cancer Commission and the Middlesex Hospital. The latter institution is to be associated with a third cancer institute to be carried out by the Barnato Fund. In Germany the Heidelberg Cancer Institute under the charge of CZERNY, is the most notable.

These various institutions for cancer research have been vastly useful not only in clearing away venerable cancer legends, but in that they have accentuated certain previously known clinical facts which had not been recognized at their full value.

*Annual Address, Kentucky State Medical Society, Oct. 19, 1909.

It is worth while to consider the bearing of several of these investigations upon the radical treatment of cancerous diseases.

First: JOHAN ORTH and others have shown that all there is of cancer is in the cancer cell, that each cell contains within itself the possibility of unlimited cell division, and that the stroma of the cancer which was for a long time considered a necessary part of the cancerous process, was in truth, but the measure of nature's resistance, and represented an ineffectual effort to stem the tide of cancerous invasion. Viewed from this standpoint we can readily see why scirrhus is slow in its development, and why contracting cancer of the mamma in which the stroma is so greatly in excess of the cell, may by slow strangulation maintain an efficient barrier against the disease for many years. It also explains the action of various chemical and thermic agents which have proven useful in the palliation and in checking the spread of the cancerous process. While the individual affected by the disease may not be able to effectually resent the insult of cancer growth which in him is represented by a high-cell proliferation with a small amount of stroma, yet his tissues will quickly resent the insult of a burn, and the resulting scar tissue acts as a barrier which like the stroma of the slower growths temporarily prevents its spread.

Second: What might be called the triumph of modern investigation is the proof that all cancers are at one time local and that in this period they are curable. This fact should lead us to strive more earnestly for a recognition of the early manifestations and the eradication of the disease in its curable period. That form of skepticism which urges that all cancers are primarily constitutional has been the cause of enormous loss of life. Fortunately this will no longer serve to excuse ignorance or inefficient methods of diagnosis, and it is well for us to understand too, our moral responsibility for unnecessary delay. The practitioner of the future who procrastinates while watching the growth of a tumor, will be held accountable to the general public and he can no longer shelter himself behind venerable but exploded theories. Finally, it leads to the conclusion that there is no known cure for cancer except removal while it is still a local process, and that all cancers in all parts of the body are necessarily surgical from their inception, and that a suspicion of it should lead to a surgical consultation.

Third: HEIDENHAIN was one of the first to correctly ap-

preciate the relation of the lymphatics to the spread of cancer, and his painstaking research work in cancer of the breast, still remains a monument to his name. He made from 11,000 to 17,000 serial microscopic sections from eleven breasts, practically converting the whole field into one gigantic microscopic picture, and demonstrated for all time the manner in which cancer spreads through the lymphatics. The more recent investigations, particularly those by HANDLEY of the Middlesex Hospital, have served to accentuate and extend HEIDENHAINES views.

It has been shown that the older the patient the slower the development of the cancerous process. The reason for this was pointed out some years ago by C. H. MAYO. In a study of the lymphatics he demonstrated that the lymphatic system reached its height in adolescence and that in advancing life the lymphatics underwent a progressive atrophy, and this lack of lymphatics accounted for the benign course of the disease in the latter decades of life as contrasted with the riotous spread of the malignant process in the young.

The practical bearing of our modern understanding of the relations of the lymphatics to cancer, have already borne fruit and sounded the death knell of the caustic and paste in the eradication of the disease. Admitting that these agents do in a way remove the local focus, of what avail are they against the lymphatic spread. Modern operations which include a wide area about the local source, and removal of the tributary lymphatics, have enabled HALSTED and others, by special technic, to give 50 per cent of five year cures in cancer of the breast, as against 14 per cent of the older writers with their limited local operations. WERTHEIM shows 51 per cent of 5 year cures in cancer of the cervix as against eight per cent of the older surgeons.

Fourth: BASHFORD, in his address on cancer before the International Medical Congress, 1909, again calls attention to the remarkable influence of chronic irritation on breaking down local resistance and thereby permitting cancer invasion; a clinical observation which has heretofore been about our only known fact in its etiology. The chronic irritation factor is evidenced in many ways, for example: The lip cancer of the smoker and its preponderance in the male. The betel nut chewer of both sexes and cancer of the mouth. Gallstones in the production of cancer of the gallbladder. Ulcer of the stomach and its relation to gastric cancer. The "chimney sweep" cancer, and many others too

numerous to mention. All of this leading up to the most important point in prophylaxis—the avoidance of the sources of chronic irritation and the relief of such conditions when present, as they can be truly said to be a precarious condition awaiting only the unknown factor to set loose normal limitations upon cell reproduction. In this connection KEEN has pointed out the necessity of a careful watch for evidence of degeneration in moles, warts, nevi and congenital defects of all kinds, on account of the frequency of secondary cancer.

As a result of our modern conception of the cancer process, there has been an enormous gain in the percentage of cures following operations upon accessible organs, the lip, breast, uterus, etc., where the diagnosis can be made early by direct inspection and palpation, but 75 per cent of all cancers in the male and 50 per cent in the female involve the alimentary canal and are not readily accessible to these direct methods of examination. It is true that by means of the esophagoscope the esophagus can be inspected, and the rectum can be palpated digitally and inspected through the proctoscope, but one-half of all carcinomata in the male, and a somewhat smaller percentage in the female, lie between the cardiac orifice of the stomach and the beginning of the rectum, and therefore cannot be subjected to direct inspection and palpation. By means of the gastroscope, glimpses of the interior of the stomach may be obtained, and the lower sigmoid may be somewhat more adequately inspected by means of the sigmoidoscope. The X-ray bismuth method is also being used and is proving of modest service in the diagnosis of gastrointestinal disease, yet after all these means of diagnosis are of secondary value only.

It may be truthfully said that the diagnosis of malignancy of the gastrointestinal tract including the biliary apparatus and the pancreas, is uncertain and often impossible during the stage of local involvement because we cannot directly examine the parts involved, and we have no test which will reliably show the disease by examinations of the blood or secretions. CRILE, ELSBURY and others are, however, doing research work on hemolysis which promises well although as yet in the experimental stage.

As could be expected from the advanced stage in which malignant disease of the alimentary canal has heretofore come to operation, the results of surgical treatment have been bad. BILLROTH'S mortality after resection of the stomach was 64 per cent,

yet the medical mortality was and still is, 100 per cent. As a result of these various influences the curious anomaly is still seen, i. e. the patient suffering from cancer of the stomach is considered a medical case and is admitted to the medical wards of hospitals where he has no chance for his life whatever. There is no more reason why cancer of the stomach should be considered a medical disease than that cancer of the lip, breast or uterus should be considered medically.

To what extent is this pessimism as to the curability of cancer of the gastro-intestinal tract justified by experience? Are the bad results due to fundamental causes and therefore unavoidable, or are cancers in this region similar in all respects to cancers in other parts of the body, and the unfavorable results due to the lateness of the diagnosis and operation? I think there can be no question but that the latter view is the correct one.

With your permission I will confine my remarks to actual results obtained in St. Mary's Hospital with patients operated on by Dr. C. H. Mayo and myself during the last ten years, from October 1, 1899 to October 1, 1909. During this period 251 gastric resections were made for cancer with a mortality of 13 per cent. Of these patients 29 per cent operated upon more than three years ago who recovered from the operation are alive and well. Two have passed the five year period and one six and one half years.

No other organ in the body is involved in cancer as often as the stomach. Thirty per cent of all cancers in the male involve the stomach. Twenty-two per cent involve the stomach in the female. These statistics are conservative. Some estimates show a much higher percentage, even as high as 50 per cent.

GRAHAM has shown that 59 per cent of the cases of gastric cancer which came to us, gave a clear history of chronic ulcer. From the microscopical examination of the resected portion of the stomach, WILSON was able to demonstrate the development of cancer on ulcer in 51 per cent of the specimens obtained from gastrectomies. As accounting for this somewhat higher percentage of gastric cancer in men over women, it has been shown in our series that 58 per cent of true gastric ulcers were in the male sex.

This question of cancer development on ulcer is a mooted point and is opposed by a number of men who have devoted a great deal of time to the purely non-operative treatment of dis-

cases of the stomach. Their convictions are, I believe, the result of fallacious clinical examinations, and so far as this subject is concerned, the equally fallacious results of post mortem examinations. How is it possible to determine from the examination of a patient dead from cancer of the stomach whether or not ulcer had existed. By the time the patient is dead of the disease all evidence would be lost in the extent of the cancer process.

At the present time we have a considerable number of favorable cases in which resection of the stomach for ulcer shows early cancerous development on its margin. This brings up the important point that when the chronic ulcer of the stomach calls for surgical treatment, resection of the diseased area is a wiser procedure than gastroenterostomy, and leads us to believe that many of the cases in which cancer has followed upon ulcer within two or three years after gastroenterostomy, that the cancer was probably present in its earlier stages at the time of the primary operation.

As DEEVER points out, what is needed is an earlier diagnosis of cancer of the stomach, and he says most pertinently, that the greatest source of delay is the test meal, and that prolonged and useless laboratory investigation is responsible for the hopeless condition in which so many of the patients present themselves to the surgeon. Without going into the question of the value of the test meal, and various laboratory tests, I think from a practical standpoint that DEEVER is right. Every year we subject about 3500 individuals to gastric examination with analysis of the stomach contents, and about ten per cent of these patients come to operation. Gastric analysis and the test meal are of importance but not of great diagnostic value. They are valuable just as the temperature and pulse are valuable, but they do not carry with them conclusive evidence during the curable period. They are merely adjuncts to the clinical side, and prolonged delay on account of their supposed value is to be depreciated.

There are two diagnostic factors of great surgical import within the reach of every physician, and a proper recognition of their value will bring surgical cure to a vast multitude of patients afflicted with cancer of the stomach. Early cancer of the stomach does not give evidence of its presence *per se* but only as it interferes mechanically with gastric function. First and most important by obstruction, the early presence of which is fortunate for

the victim requiring as it does an early surgical investigation. Second, by tumor.

Cancer of the body of the stomach is ushered in by a long train of indefinite symptoms, the lateness of the appearance of obstruction and tumor usually precluding the possibility of surgical cure. On the contrary early obstruction and early tumor indicate not only a favorable condition, but that the growth is in the pyloric end, the removable part of the stomach.

It has been stated by some authority, now happily forgotten, that the presence of tumor in the stomach proved the condition to be hopeless. Quite the contrary is true. The appearance early in the disease of a movable tumor with or without obstruction, promptly gives a diagnosis and makes surgical relief possible in a high percentage of cases. I will not insult your intelligence by calling attention to the fact that the ability to feel a tumor is not confined to the gastric specialist, and certainly the diagnosis of a mechanical obstruction is simple in the extreme. The patient is told to take a full meal in the evening including with it some raisins and half cooked rice. Any residue in the stomach is removed in the morning with the stomach tube and if food remnants are repeatedly shown, the diagnosis of mechanical obstruction is established. It is objected that some of the obstructions are due to ulcer. Quite true, but such obstructions are equally incurable by medical means.

In our series of cases cancer of the small intestine occurred 13 times. Of these five were of the duodenum and could not be subjected to operation beyond the exploration necessary to establish their presence. Two involved the jejunum at its origin and were inoperable, and six originated in various parts of the jejunum and ileum, all of which were resected.

It is evident that the small intestine, perhaps because of its freedom from sources of chronic irritation, is not often the primary seat of cancer. In two of the patients the neoplasms began upon the polypoid growth, again illustrating the baneful influence of chronic irritation. Resection with removal of the tributary lymphatics is of course indicated.

Fortunately the limited caliber of the small intestines calls early attention to the growth by obstructive symptoms, while the situation in the abdomen gives an opportunity for palpation in the discovery of the tumor.

We have resected the large intestine 69 times for carcinoma.

Of these 28 were of the cecum and ascending colon. Nine of the transverse colon and flexures, 32 of the sigmoid and descending colon. Sixty per cent. of our patients subjected to resection more than three years ago and who recovered from the operation are alive and well; several of them have passed the five year period.

Cancer of the large intestine clearly illustrates the pernicious influences of which I have spoken previously. The colonic contents are mechanically more irritating than the small intestine as the injesta is more solid in character as well as more prolonged in residence. Fortunately cancer of the large intestine is among the most curable to which the human being is subject. It has a very limited lymphatic connection; not only are the glands sparse but slow to take offense. This is rendered necessary by the very nature of its function and even when enlarged glands are found they are often the result of the accompanying infection without actual invasion of the cancerous cells. Not only this, but its lymphatics lie in well recognized groups and are capable of surgical removal.

In conclusion I wish to call attention to cancer of the gallbladder as an illustration of the fact that cancer is primarily a local condition and curable by surgical operation in that stage, and again because it illustrates the perniciousness of chronic irritation of gallstones in its production.

Of the 3084 cases of gallstone disease which we have operated upon, in no less than 74, nearly three per cent, cancer involved the gallbladder and biliary tract, and in every case in which we were able to ascertain the facts, gallstones were present. In eight cases the gallbladder and a considerable portion of the liver were removed for a known cancer process. None of these patients lived a year but in five instances the removal of a thickened, functionless gallbladder containing stones, in which cancer was not suspected, the microscopical examination of the removed gallbladder showed early cancer. All but one of these patients are alive and well.

In summing up it can be shown conclusively, I think, that there is no reason why operations for cancer of the gastro-intestinal canal should not show results as good, both immediate and remote, as after operations for cancer in any other part of the body.



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